CONGRESSIONAL PERSPECTIVES ON ELECTRICITY MARKETS IN CALIFORNIA AND THE WEST AND NATIONAL ENERGY POLICY

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ever experienced. The startling element associated with this problem is the staggering amount of life savings and business capital that is gone forever. This is money that could go to mortgage payments, to educate children, and in the case of small businesses, money that has already left our local economies that may have otherwise served to further stimulate our State's financial growth.As you know, one of the central issues to this dilemma is the inability to establish enough power generation in California to meet our ever-increasing electricity needs. To help remedy this situation, I am introducing separate pieces of legislation that would provide the authority to expedite and expand the siting and operations of electricity producing facilities of all sizes. More precisely, my legislation would provide the following:

1) the statutory authority necessary for the President to suspend all applicable siting and emissions compliance requirements for the purpose of establishing new electricity generation capacity in any State experiencing a power crisis; and
2) the ability for any individual or business, during designated times of emergency, to operate any independent source of generation, with any sort of fuel available, until the emergency has subsided.

Mr. Chairman, I recognize the profound and ambitious nature of these proposals, but I believe that this level of action is more than warranted. In the absence of a properly functioning market, which has allowed for the major power generators selling into California to establish a monopoly that is every bit as effective as anything John D. Rockefeller could have conceived, our cities, businesses and private citizens must have the ability to develop electricity independence.

In closing, I would implore this Subcommittee to consider all proposals designed to establish and expand all possible sources of electricity generation. Our consumers cannot, under any circumstances, be expected to be held hostage by an electricity market that has witnessed price increases which have exceeded 9,000 percent in a matter of hours.

Thank you, Mr. Chairman, and members of this Subcommittee, for the opportunity to provide this testimony. I am confident that if we pursue this matter in an aggressive and expedited manner, we can provide California with the resources necessary to help stabilize its electricity industry before the existing crisis deteriorates any further.

PREPARED STATEMENT OF HON. JOHN B. LARSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CONNECTICUT

Mr. Chairman, I would like to thank you for calling this hearing to allow members to discuss the current California energy crisis and other issues generally related to energy efficiency. I am sure that throughout the day you will be hearing testimony from many Members about the problems in California at this time and the desperate situation individuals and business have been subjected to. However, I hope to bring before the Committee and my colleagues from the western United States a potential solution to many of the current energy problems facing California and its neighboring states.

The problems in California did not develop in a vacuum. Ever since the people of the First District of Connecticut first sent me to Congress I have been fighting with the help of many of my colleagues to begin a serious debate about energy policy reform in this country. Since I was sent here in 1998, energy prices in New England have risen over 200 percent for home heating oil, and natural gas, diesel, and gasoline have also all seen significant increases. That is why we have been fighting so hard for programs like the Strategic Home Heating Oil Reserve now established in New England to head off emergency in the heating oil market, and increased LIHEAP assistance for eligible individuals.

Fortunately for Connecticut's consumers and businesses and unlike California, electricity prices have remained stable during this time because Connecticut allows for long-term contract purchasing of power under its deregulated electricity market, and provides incentives that make generating electricity more attractive than attempting to purchase it on the open spot market. However, it is only a matter of time before the overall inflation of energy costs, particularly those related to electricity generation, will catch up with the northeast as well. As the California situation is reminding us, there are no real short-term solutions for long-term problems.

That is why I introduced HR 5585, the Energy Independence Act, toward the end of the 106th Congress, to begin to address these issues and the fundamental weaknesses beginning to show in America's energy infrastructure. I am working to reintroduce the legislation targeting development of fuel cell technology again soon, and I believe that this technology and my legislation could provide immediate and

beneficial effects improving the energy and environmental outlook of California and the United States as a whole.

Specifically, my legislation would invest approximately 1/60 of the nation's total yearly expenditures in 1999 and 1/120th of 2000's expenditures on foreign oil to develop and demonstrate fuel cell technology that can power our homes, businesses, and vehicles over the next five years. My bill calls for a $1 billion 5-year investment that should eliminate our reliance on foreign energy sources by 2010 and improve world environmental conditions by reducing overall consumption of fossil fuels and the harmful chemical emissions they produce. It authorizes a federal purchase programs for commercially available stationary fuel cell power systems and demonstrations of new Proton Exchange Membrane (PEM) technology for residential, commercial and transportation applications including transit vehicles. In addition, it would establish a grant program for states and local municipalities to help local communities incorporate this new technology into their overall energy portfolios.

I believe that government action is necessary at the state and federal level to help defray the high introductory costs of fuel cell technology at this time and accelerate their commercialization. A federal tax credit, such as the one proposed by my colleague Nancy Johnson, as well as grant programs for federal facilities and municipalities will increase volume and thereby reduce overall costs, making the technology more available so its many benefits can be enjoyed by the general public. State and federal government purchases of fuel cells represent another means to deploy the technology while enhancing public safety and ensuring critical energy loads are served with reliable, clean energy sources. The government can also help to eliminate barriers to distributed generation so fuel cell technology can compete with existing power generating sources.

The government must play a role in this transition for several reasons. First and foremost, it will provide for the security of the country in both economic and military terms by eliminating our reliance on foreign energy sources. Second, we have a responsibility to our seniors and to other people living on fixed incomes to see that they have opportunity to live within their means without being forced to choose between putting food on their tables, gas in their cars, buying oil to heat their homes, or buying electricity to power their homes. Third, there is the opportunity within the government's infrastructure to most easily begin a widespread integration of this technology. Fourth, the spread and use of this technology has the opportunity to create a contribution in economic growth and in job creation every bit as significant as the development of the high tech industry during the last decade. Further, as government regulations increasingly call for stricter clean air and other pollutions limits, fuel cells can provide an effective way for states and communities to meet these new environmental challenges.

Many people would argue that the problems in California stem from underestimating projected energy demands and a deregulation program that failed because it capped retail sales to consumers and prevented long term contacting. Regardless of the cause, California must increase its power generating capability by thousands of megawatts, an increase it is expected to take 1-3 years to deploy, select, and become operational.

There are clear benefits in using fuel cell technology to address the California energy situation that can also be applied in other areas throughout the country. First, as a distributed generation technology, fuel cells address the immediate need for secure and adequate energy supplies, while reducing grid demand and increasing grid flexibility. Fuel cells can be used by electric utilities to fill load pockets when and where new large-scale power plants are impractical or cannot be sited. Fuel cell systems also avoid the costly and environmentally problematic installation of transmission and distribution systems. Commercially manufactured fuel cell power plants can be sited in a few months period of time and can provide continuous, reliable power without the need to roll back existing environmental requirements.

Second, Fuel cell power plants provide a constant source of power that can be used for base load applications. Unlike other environmentally favorable solutions, fuel cells can be used as a continuous source of base power—independent of time-of-day or weather—for critical facilities, thereby offloading current strains on existing demand.

Third, fuel cells represent an environmentally favorable solution, with near-zero emissions—positively impacting the State's air quality objectives, particularly as compared to less efficient, polluting alternatives. When operating at its rated power, a single 200 kW PC25 fuel cell power plant, manufactured by International Fuel Cells (IFC) and currently the only commercially available unit, eliminates an average of more than 40,000 pounds of air pollutants including NO_X and SO_X and two million pounds of CO_2 emissions per year otherwise emitted by typical US combustion-based generators.

Fourth, fuel cells are a highly efficient technology that uses an electro-chemical reaction to generate electricity and are inherently more efficient than combustion-based systems. In the electricity-only mode of operation, the IFC PC25 unit achieves approximately 40 percent efficiency. When the waste heat from the fuel cell is utilized, the system's efficiency reaches 87 percent. In addition, fuel cells can be installed at the point of use thus eliminating transmission line losses and enhancing their overall efficiency, providing power at the point-of-use, thereby alleviating the load on the existing transmission and distribution infrastructure, and eliminating or minimizing the need for additional investment in the existing transmission and distribution network.

Fifth, the use of fuel cells helps to diversify California's and the country's energy market. Fuel cells can operate with a variety of fuel sources, but most commonly use natural gas. For example, fuel cell systems have been developed that use anaerobic digester gases from wastewater treatment facilities as their source of energy. These applications are particularly significant since they avoid the flaring of methane—a potent greenhouse gas that contributes to global warming—and the need to use a fossil fuel energy source. This employment of fuel cell technology is currently in use at the Rancho Las Virgenes Composting facility in Calabasas, California outside of Los Angeles, the first installation of its kind in California and the fourth in the United States. Similar systems also manufactured by International Fuel Cells in South Windsor, Connecticut, are also operating in Germany and Japan. A total of Eight PC25 units are currently operating in California, including power plants at a hospital in Riverside, a hotel in Irvine, a jail in Santa Barbara, and the South Coast Air Quality Management District Headquarters outside Los Angeles in addition to the one in Calabasas.

Finally, the compact size, low noise and near zero emissions allows a fuel cell system to be readily absorbed into communities and neighborhoods. Unlike many other forms of power generation, fuel cell power plants are good neighbors to concerned citizens. For example, a PC25 installation in New York City is located inside the Conde Nast skyscraper at 4 Times Square, where it provides 5 percent of the building's electrical needs and the waste heat is used to run the air conditioning. The fuel cell system also provides critical backup power in case the grid fails

While fuel cells cannot supply enough power in the short term to solve the entire power supply needs of California, they can be deployed strategically to ensure that critical services and operations have a secure, reliable, efficient and clean source of energy. High priority should be given to the installation of fuel cells in assured power applications involving emergency services, public safety, health care, communications and data processing operations. Leading industry officials have assured me that 20 to 40 megawatts of new fuel cell power supply could be available to California for such applications in the next 18-24 months.

In conclusion, I believe that implementation of fuel cell technology could significantly improve California's immediate energy needs and their extraordinary efficiency would improve the overall national energy portfolio. This technology has been with us since it was first used to power the Gemini and Apollo spacecraft, and is still powering NASA's fleet of space shuttles. It has finally matured to a point where stationary power plants are providing reliable commercial power today and is prepared to demonstrate its advantages to the general public in clean, quiet, and efficient residential, bus, and car applications.

Fuel cell technology presents us with an extraordinary opportunity, at a critical time in this country's development. I believe we stand now on a fundamental crossroad in this country where we have the ability to provide for the economic and national security of the nation by integrating this new technology into our economy. As you move forward with potentially compatible programs under your jurisdiction, I urge you to consider integrating fuel cell technology to meet your energy and energy efficiency requirements. Your leadership at this critical juncture in our nation's history can profoundly improve the security and independence of every American, and provide a safer, more secure, more productive, and cleaner environment for generations to come. We must not allow this opportunity to be lost.

Thank you again Mr. Chairman and members of the Subcommittee for you efforts in this important area.

PREPARED STATEMENT OF HON. BILL LUTHER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MINNESOTA

Thank you Mr. Chairman for holding this hearing today so we can all better understand and learn from the events in California over the past few months. I am pleased that there are so many members from the West Coast testifying today and